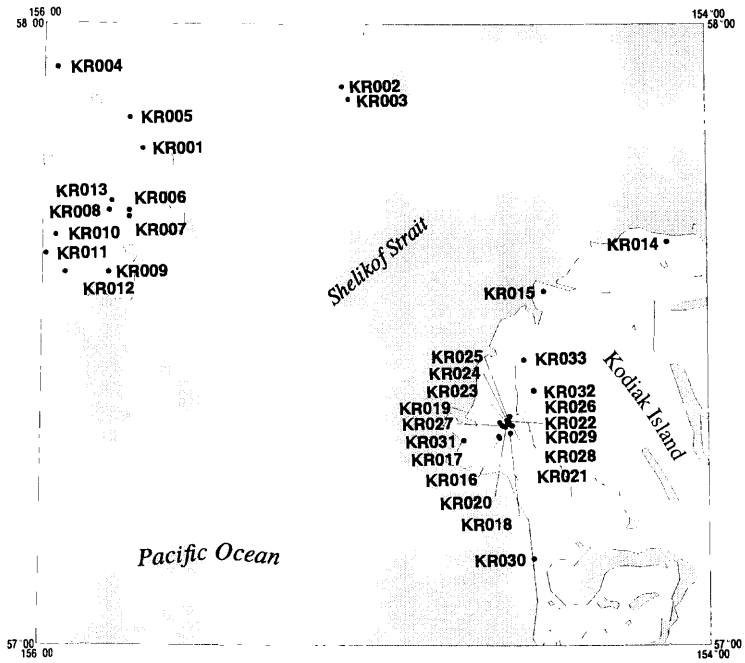
Alaska Resource Data File

U.S. Department of the Interior - U.S. Geological Survey

Karluk quadrangle

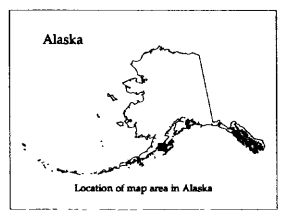
Descriptions of the mineral occurrences shown on the accompanying figure follow. See U.S. Geological Survey (1996) for a description of the information content of each field in the records. The data presented here are maintained as part of a statewide database on mines, prospects and mineral occurrences throughout Alaska.



Distribution of mineral occurrences in the Karluk 1:250,000-scale quadrangle, Alaska

This and related reports are accessible through the USGS World Wide Web site http://www-mrs-ak.wr.usgs.gov/ardf. Comments or information regarding corrections or missing data, or requests for digital retrievals should be directed to Donald J. Grybeck, USGS, 4200 Unversity Dr., Anchorage, AK 99508-4667, email dgrybeck@usgs.gov, telephone (907) 786-7424. This compilation is authored by:

Steven H. Pilcher
12026 Wilderness
Anchorage, AK 99516



USGS science for a changing world

OPEN-FILE REPORT 99-42

Site name(s): Puale Bay; Cold Bay

Site type: Prospect

ARDF no.: KR001

Latitude: 57.8 **Quadrangle:** KR D-6

Longitude: 155.7

Location description and accuracy:
This site is located approximately 4 miles west of Puale Bay in T. 28 S., R. 39 W., of the Seward Meridian (Berg and Cobb, 1967, figure 1, locality 1; Cobb, 1972, MF 459, locality 1; MacKevett and Holloway, 1977, locality 1; Church and others, 1989, MF 1539 I, locality 8). This site location is accurate to within several miles.

Commodities:

Main: Cu

Other: Ag, Au

Ore minerals: Chalcopyrite

Gangue minerals:

Geologic description:
Berg and Cobb (1967, p. 7) report that in 1920 samples were collected from chalcopyrite lenses which could be traced for 1 mile. Two samples assayed up to 0.31 ounce per ton gold, 8.1 ounces per ton silver, and 24.4 percent copper. Bedrock in this area consists of Upper Jurassic to Lower Cretaceous sedimentary units of the Naknek formation. The deposit type is unknown but may be a polymetallic vein controlled by a contact zone of an unmapped dike or sill.

Alteration:

Age of mineralization:

Deposit model:
Polymetallic vein ? (Cox and Singer, 1986; model 22c).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
22c

Production Status None

Site Status: Inactive

Workings/exploration:
Samples collected and analyzed.

Production notes:

Reserves:

Additional comments:
This site is located within Becharof Natural Wildlife Refuge.

References:
Berg and Cobb, 1967; Cobb, 1972 (MF 459); U.S. Bureau of Mines, 1973; MacKevett and Holloway, 1977; Cobb, 1979 (OFR 79-860); Church and others, 1989 (MF 1539 I).

Primary reference: Berg and Cobb, 1967

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 08/16/98

Site name(s): Cape Kubugakli Lode

Site type: Occurrence

ARDF no.: KR002

Latitude: 57.9 **Quadrangle:** KR D-4

Longitude: 155.1

Location description and accuracy:
This site is located at the eastern end of Cape Kubugakli and encompasses an area of several square miles (Berg and Cobb, 1967, figure 4, locality 16; Cobb, 1972, MF 459, locality 2; MacKevett and Holloway 1977, locality 2; Church and others, 1989, MF 1539 I, locality 9).

Commodities:

Main: Au

Other: Cu, Mo, Pb, Sb

Ore minerals: Galena, gold, magnetite, molybdenite, pyrite, stibnite, tetrahedrite

Gangue minerals: Quartz

Geologic description:
Quartz stringers 1/2-inch or less thick are present in some felsic dikes and quartz diorite plugs of Miocene age, and in some of the sedimentary rocks cut by the intrusives. The stringers carry minor amounts of galena, gold, magnetite, molybdenite, pyrite, stibnite, and tetrahedrite. Bedrock consists of sedimentary units of the Shelikof formation of Jurassic age. Sericitic and propylitic alteration and silicification have been mapped over an area of several square miles and includes the mineralized rocks.

Silt samples collected within this area may exhibit anomalous amounts of molybdenum, whereas panned concentrates may show anomalous antimony, boron, copper, gold, and silver (Church and others, 1989, MF 1539 I, Bulletin 1858). Gold, chalcopyrite, pyrite scheelite, and tourmaline have been noted in the concentrates. Mineralized rock samples may be anomalous in copper, gold, molybdenum, silver, and zinc.

Alteration:
Sericitic and propylitic alteration and silicification have been mapped over an area of several square miles.

Age of mineralization:
Miocene or younger

Deposit model:
Porphyry Cu, porphyry Cu-Mo, polymetallic vein (Cox and Singer; model 17, 21a, 22c).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
17, 21a, 22c

Production Status None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
Site is located in Katmai National Park.

References:
Smith, 1925; Berg and Cobb, 1967; Cobb, 1972 (MF 459); MacKevett and Holloway, 1977; Cobb, 1979 (OFR 79-860); Detterman and others, 1987; Church and others, 1989 (MF 1539 I, B 1858).

Primary reference: Church and others, 1989 (MF468, Bulletin 1858)

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 08/18/98

Site name(s): Cape Kubugakli Placer

Site type: Mine

ARDF no.: KR003

Latitude: 57.88 **Quadrangle:** KR D-4

Longitude: 155.08

Location description and accuracy:
This site is located on a small easterly drainage at the east end of Cape Kubugakli (Berg and Cobb, 1967, figure 4, locality 16; Cobb, 1972, MF 459, locality 3; Cobb, 1973, Bulletin 1374, figure 4, locality 15; MacKevette and Holloway, 1977, locality 3; Church and others, 1989, MF 1539 I, locality 10). Location is accurate to within 1/2 mile.

Commodities:

Main: Au

Other: Mo, Pb, Sb

Ore minerals: Galena, gold, molybdenite, stibnite

Gangue minerals: Quartz

Geologic description:
Placer gold occurs along a small drainage in a sinuous strip 8-10 feet wide (Smith, 1925). Bedrock is about 2 feet below a covering of gravel and large boulders. The source of the gold is apparently from gold-sulfide bearing quartz stringers in the area (see Cape Kubugaki Lode, ARDF No. KR002). The best pay was found just downstream from outcropping quartz stringers. Total production between 1915 and 1925 is estimated at 160 ounces.

Alteration:

Age of mineralization:
Quaternary

Deposit model:
Gold placer (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status Yes; small

Site Status: Inactive

Workings/exploration:

From 1915 to 1925 a small amount of gold was recovered each year. The total amount produced was approximately 160 ounces (Smith, 1925). No production has been reported since that time.

Production notes:

Total estimated production was 160 ounces of gold from 1915 to 1925. Additional later production has not been reported.

Reserves:

Additional comments:

Site is located in Katmai National Park.

References:

Smith, 1925; Berg and Cobb, 1967; Cobb, 1972 (MF 459); Cobb, 1973 (B 1374); MacKevett and Holloway, 1977; Cobb, 1979 (OFR 79-860).

Primary reference: Smith, 1925

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 08/18/98

Site name(s): Becharof Lake

Site type: Occurrence

ARDF no.: KR004

Latitude: 57.93 **Quadrangle:** KR D-6

Longitude: 155.96

Location description and accuracy:
This site represents placer claims located near VABM Marie, indicated on U.S. Bureau of Mines maps in 1973 (MacKevett and Holloway, 1977, locality 14; Church and others, 1989, MF 1539 I, locality 11). Site locality is accurate to within 1/2 mile.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
No information available.

Alteration:

Age of mineralization:
Quaternary

Deposit model:
Gold placer (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

Site is located in Becharof Natural Wildlife Refuge.

References:

U.S. Bureau of Mines, 1973; MacKevett and Holloway, 1977; Church and others, 1989 (MF 1539 I).

Primary reference: Church and others, 1989 (MF 1539 I)

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 08/20/98

Site name(s): Margaret Creek

Site type: Occurrence

ARDF no.: KR005

Latitude: 57.85 **Quadrangle:** KR D-6

Longitude: 155.74

Location description and accuracy:
This site represents placer claims located near Margaret Creek, indicated on U.S. Bureau of Mines maps in 1973 (MacKevett and Holloway 1977, locality 15; Church and others, 1989, MF 1539 I, locality 12). Site location is accurate to within 1 mile.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
No information available.

Alteration:

Age of mineralization:
Quaternary

Deposit model:
Gold placer (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
Site is located in Becharof Natural Wildlife Refuge.

References:
U.S. Bureau of Mines, 1973; MacKevett and Holloway, 1977; Church and others, 1989 (MF 1539 I).

Primary reference: Church and others, 1989 (MF 1539 I)

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 08/20/98

Site name(s): Trail Creek

Site type: Occurrence

ARDF no.: KR006

Latitude: 57.7 **Quadrangle:** KR C-6

Longitude: 155.74

Location description and accuracy:
This site represents placer claims located on Trail Creek , indicated on U.S. Bureau of Mines maps in 1973 (MacKevett and Holloway 1977, locality 12?; Church and others, 1989, MF 1539 I, locality 13). Location is accurate to within 1 mile.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
No information available.

Alteration:

Age of mineralization:
Quaternary

Deposit model:
Gold placer (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
Site is located in Becharof Natural Wildlife Refuge.

References:
U.S. Bureau of Mines, 1973; MacKevett and Holloway, 1977; Church and others, 1989 (MF 1539 I).

Primary reference: Church and others, 1989 (MF 1539 I)

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 08/20/98

Site name(s): Oil Creek

Site type: Occurrence

ARDF no.: KR007

Latitude: 57.69 **Quadrangle:** KR C-6

Longitude: 155.74

Location description and accuracy:
This site represents placer claims located on Oil Creek, indicated on U.S. Bureau of Mines maps in 1973 (MacKevett and Holloway, 1977, locality 12?; Church and others, 1989, MF 1539 I, locality 14). Location is accurate to within 1 mile.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
No information available.

Alteration:

Age of mineralization:
Quaternary

Deposit model:
Gold placer (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
Site is located in Becharof Natural Wildlife Refuge.

References:
U.S. Bureau of Mines, 1973; MacKevett and Holloway, 1977; Church and others, 1989 (MF 1539 I).

Primary reference: Church and others, 1989 (MF 1539 I)

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 08/20/98

Site name(s): Sulfur Creek

Site type: Occurrence

ARDF no.: KR008

Latitude: 57.7 **Quadrangle:** KR C-6

Longitude: 155.8

Location description and accuracy:
This site, located east of the headwaters of Sulfur Creek, represents lode claims in T. 29 S., R. 40 W., of the Seward Meridian, indicated on U.S Bureau of Mines Maps in 1973 (Church and others, 1989, MF 1539 I, locality 7). The location of this site differs by several miles between the two references noted and it is only accurate to within 5 miles.

Commodities:

Main: Au?, Cu?

Other:

Ore minerals:

Gangue minerals:

Geologic description:
No information available. Bedrock consists of sedimentary units of the Shelikof formation of Jurassic age.

Alteration:

Age of mineralization:

Deposit model:

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
Site is located in Becharof Natural Wildlife Refuge.

References:
U.S. Bureau of Mines, 1973; Church and others, 1989 (MF 1539 I).

Primary reference: Church and others, 1989 (MF 1539 I)

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 08/21/98

Site name(s): Rex Creek, North Fork

Site type: Occurrence

ARDF no.: KR009

Latitude: 57.6 **Quadrangle:** KR C-6

Longitude: 155.8

Location description and accuracy:
This site represents lode claims indicated on U.S. Bureau of mines maps in 1973 (MacKevett and Holloway 1977 locality 11; Church and others, 1989, MF 1539 I, locality 6). These references indicate that the claims are on the south fork rather than the north fork of Rex Creek. The locality is therefore suspect and can only be considered accurate to within several miles.

Commodities:

Main: Au?, Cu?

Other:

Ore minerals:

Gangue minerals:

Geologic description:
Church and others, 1989 (MF 1539 I) suggest that this occurrence may consist of copper mineralization along the margin of an unmapped dike. Bedrock consists of sedimentary units of the Shelikof formation of Jurassic age.

Alteration:

Age of mineralization:

Deposit model:

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
Site is located in Becharof Natural Wildlife Refuge.

References:
U.S. Bureau of Mines, 1973; MacKevett and Holloway, 1977; Church and others, 1989 (MF 1539 I).

Primary reference: Church and others, 1989 (MF 1539 I)

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 08/22/98

Site name(s): Bear Creek

Site type: Occurrence

ARDF no.: KR010

Latitude: 57.66 **Quadrangle:** KR C-6

Longitude: 155.96

Location description and accuracy:
This site represents placer claims located on Bear Creek in T. 29 S., R. 41 W., of the Seward Meridian, as indicated on U.S. Bureau of Mines maps in 1973 (MacKevett and Holloway, 1977, locality 9; Church and others, 1989, MF 1539 I, locality 15). Location is accurate to within 1 mile.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
No information is available.

Alteration:

Age of mineralization:
Quaternary

Deposit model:
Gold placer (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
Site is located in Becharof Natural Wildlife Refuge.

References:
U.S. Bureau of Mines, 1973; MacKevett and Holloway, 1977; Church and others, 1989 (MF 1539 I).

Primary reference: Church and others, 1989 (MF 1539 I)

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 08/22/98

Site name(s): Salmon Creek, North

Site type: Occurrence

ARDF no.: KR011

Latitude: 57.63 **Quadrangle:** KR C-6

Longitude: 155.99

Location description and accuracy:
This site represents placer claims located on Salmon Creek in T. 29 S., R. 41 W., of the Seward Meridian, indicated on U.S. Bureau of Mines Maps in 1973 (MacKevett and Holloway, 1977, locality 7; Church and others, 1989, MF 1539 I, locality 16). Locality is accurate to within 1/2 mile. Placer work may extend southeast to Salmon Creek, South (ARDF No. KR012).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
No information available.

Alteration:

Age of mineralization:
Quaternary

Deposit model:
Gold placer (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
Site is in Becharof Natural Wildlife Refuge.

References:
U.S. Bureau of Mines, 1973; MacKevett and Holloway, 1977; Church and others, 1989 (MF 1539 I).

Primary reference: Church and others, 1989 (MF 1539 I)

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 08/22/98

Site name(s): Salmon Creek, South

Site type: Occurrence

ARDF no.: KR012

Latitude: 57.6 **Quadrangle:** KR C-6

Longitude: 155.93

Location description and accuracy:
This site represents placer claims located on Salmon Creek in T. 29 S., R. 41 W., of the Seward Meridian, indicated on U.S. Bureau of Mines maps in 1973 (MacKevett and Holloway, 1977, locality 8; Church and others, 1989, MF 1539 I, locality 17). Locality is accurate to within 1/2 mile. Placer work may extend northwest to Salmon Creek, North (ARDF No. KR011).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
No information available.

Alteration:

Age of mineralization:
Quaternary

Deposit model:
Gold placer (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
Site is in Becharof Natural Wildlife Refuge.

References:
U.S. Bureau of Mines, 1973; MacKevett and Holloway, 1977; Church and others, 1989 (MF 1539 I).

Primary reference: Church and others, 1989 (MF 1539 I)

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 08/22/98

Site name(s): Unnamed

Site type: Occurrence

ARDF no.: KR013

Latitude: 57.7 **Quadrangle:** KR C-6

Longitude: 155.8

Location description and accuracy:
This site represents placer claims indicated on U.S. Bureau of Mines maps in 1973 (MacKevett and Holloway, 1977, location 10?). They were probably located on Dry Creek. The site location is accurate to within 5 miles.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
No information is available.

Alteration:

Age of mineralization:
Quaternary

Deposit model:
Gold placer (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
Site is in Becharof Natural Wildlife Refuge.

References:
U.S. Bureau of Mines, 1973; MacKevett and Holloway, 1977.

Primary reference: MacKevett and Holloway, 1977

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 09/10/98

Site name(s): Sevenmile Beach

Site type: Mine

ARDF no.: KR014

Latitude: 57.65 **Quadrangle:** KR C-1

Longitude: 154.12

Location description and accuracy:
This site is a beach located between VABM Rocky Point on the west and Uyak Bay on the east, a distance of approximately 4 1/2 miles (Cobb, 1972, MF 459, locality 4; Cobb, 1973, Bulletin 1374, figure 11, locality 3; MacKevett and Holloway, 1977, locality 4).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Brooks (1912) first reported that a new beach placer had been found near Uyak in the summer of 1911. This is a broad sand and gravel beach, behind which are 60-foot bluffs of glacial gravel and till. Most of the gold was obtained over a distance of 3 3/4 miles, where the best pay occurred near the base of the bluffs on a clay layer which lay 1 to 6 feet below the surface. The pay streak was 12 to 16 inches thick and contained some nuggets valued up to $0.25 (gold price at $20.67). Sluice boxes and rockers were used in the mining and it was said that a person could recover up to $10 worth of gold per day. By 1912 the paystreak was apparently worked out. The immediate source of the gold is thought to be the glacial material eroded from the bluffs. Brooks (1918) reported that a sample collected here contained no detectable platinum.

Alteration:

Age of mineralization:
Quaternary

Deposit model:
Gold placer (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status Yes; small

Site Status: Inactive

Workings/exploration:
The beach deposit was mined by portable sluice boxes and rockers with most of the production taking place in 1911 and 1912.

Production notes:

Reserves:

Additional comments:

References:
Brooks and others, 1912; Martin, 1913; Brooks and others, 1918; Maddren, 1919; Capps, 1937; Cobb, 1972 (MF 459); Cobb, 1973 (B 1374); MacKevett and Holloway, 1977; Cobb, 1979 (OFR 79-860).

Primary reference: Martin, 1913

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 09/08/98

Site name(s): Tanglefoot Bay

Site type: Occurrence

ARDF no.: KR015

Latitude: 57.57 **Quadrangle:** KR C-2

Longitude: 154.49

Location description and accuracy:
This occurrence is located in the vicinity of Tanglefoot Bay as indicated on U.S. Bureau of Mines maps in 1973. Site location is accurate to within 1/2 mile.

Commodities:

Main: Ag, Au, Pb

Other:

Ore minerals:

Gangue minerals:

Geologic description:
U.S. Bureau of Mines classified this as a lode containing Ag, Au, and Pb. The area is underlain by quartz diorite of Jurassic age (Moore, 1967; Connelly and Moore, 1979).

Alteration:

Age of mineralization:
Jurassic or younger

Deposit model:
Polymetallic vein? (Cox and Singer, 1986; model 22c).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
22c

Production Status None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

U.S. Bureau of Mines, 1973.

Primary reference: U.S. Bureau of Mines, 1973

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 09/10/98

Site name(s): Halibut Bay 41

Site type: Occurrence

ARDF no.: KR016

Latitude: 57.334 **Quadrangle:** KR B-2

Longitude: 154.622

Location description and accuracy:

This site is located 3 miles northwest of Anvil Mountain in sec. 12, T. 33 S., R. 34 W., of the Seward Meridian (Foley and Barker, 1985, figure 25, locality 41; Foley and others, 1989, locality 32). Site location is accurate to within a few hundred feet.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite

Gangue minerals:

Geologic description:

This chromite occurrence, one of several known within the Halibut Bay ultramafic complex, consists of a 50-foot wide zone of elongated lenses of disseminated to massive chromite in serpentinized dunite. The zone strikes N. 10 E. and dips steeply to the west. It is exposed for 250 feet along strike and has an estimated dip length of 62 feet. Foley and Barker (1985, table 13) estimate that the deposit contains 80,000 tons of rock grading 5 percent chromite. A bulk sample had a head grade of 22.4 percent chromite and a gravity concentrate grade of 50.6 percent. The concentrate had a chrome:iron ratio of 2.1 and contained traces of gold, silver, palladium, and platinum (Dahlin and others, 1985, table A-25).

The dunite is a part of the Halibut Bay ultramafic complex, which also includes gabbro, pyroxenite, and peridotite. The complex occurs within sedimentary units of the Uyak formation of Cretaceous age.

A floatation sample of peridotite from an unknown localilty within the complex contained 11.8 percent copper, 1.55 percent nickel, 0.083 percent cobalt, 0.159 ounce per ton platinum, 0.336 ounce per ton palladium, 0.133 ounce per ton gold, and 20 ounces per ton silver (Foley and others 1989). Minerals identified in the concentrate include chalcopyrite, cobaltian pentlandite, pyrrhotite, stannopalladinite, uvarovite, and villamanite. Grab samples from this locality contain up to 7,700 ppm chrome, 3,626 ppm copper, 839 ppm nickel, 420 ppb platinum, and 480 ppb palladium.

Alteration:
The ultramafic country rock is serpentinized.

Age of mineralization:

Deposit model:
Podiform chromite (Cox and Singer, 1986; model 8b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
8b

Production Status None

Site Status: Inactive

Workings/exploration:
Foley and Barker (1985, table 13) estimate 80,000 tons of rock grading 5 percent chromite at this occurrence. A high grade bulk sample had a head grade of 22.4 percent chromite and a gravity concentrate grade of 50.6 percent. The concentrate contained traces of gold, palladium, and platinum and had a chrome:iron ratio of 2.1.

Production notes:

Reserves:
The deposit is estimated to contain 80,000 tons of rock grading 5 percent chromite.

Additional comments:
Site is located in Kodiak National Wildlife Refuge.

References:
Foley and Barker, 1985; Dahlin and others, 1985; Foley and others, 1989.

Primary reference: Foley and Barker, 1985

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 08/30/98

Site name(s): Halibut Bay 42

Site type: Occurrence

ARDF no.: KR017

Latitude: 57.337 **Quadrangle:** KR B-2

Longitude: 154.625

Location description and accuracy:
This site is located 3.5 miles northwest of Anvil Mountain in sec. 12, T. 33 S., R. 34 W., of the Seward Meridian (Foley and Barker, 1985, figure 25, locality 42; Foley and others, 1989, locality 32). Site location is accurate to within a few hundred feet.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite

Gangue minerals:

Geologic description:
This chromite occurrence, one of several known within the Halibut Bay ultramafic complex, consists of a 3-foot wide zone containing narrow bands of chromite, each less than 2 inches thick , enclosed by serpentinized dunite. The zone strikes N. 5 E. and dips 70 W. and has an undetermined strike length. The grade of the zone is estimated to be 10 percent chromite (Foley and Barker, 1885, table 13). Some disseminated chromite is present for 20 feet on either side of the zone. The combined grade of the zone and surrounding rock is estimated to be 4 percent or less chromite. A bulk sample had a head grade of 16.7 percent chromite and a gravily concentrate grade of 40 percent chromite. The concentrate had a chrome:iron ratio of 1.3 and contained traces of gold, silver, platinum, and palladium (Dehlin and others, 1985, table A-25)

The dunite is a part of the Halibut Bay ultramafic complex, which also includes gabbro, pyroxenite, and peridotite. The complex occurs within sedimentary units of the Uyak formation of Cretaceous age.

Alteration:
The ultramafic country rock is serpentinized.

Age of mineralization:

Deposit model:
Podiform chromite (Cox and Singer, 1986; models 8a, 8b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
8a, 8b

Production Status None

Site Status: Inactive

Workings/exploration:
Foley and Barker (1985, table 13) estimate a grade of 10 percent chromite for the main zone. A high grade bulk sample had a head grade of 16.7 percent chromite and a gravity concentrate grade of 40.0 percent. The concentrate had a chrome:iron ratio of 1.3 and contained traces of gold, silver, platinum, and palladium (Dahlin and others, 1985, table A-25).

Production notes:

Reserves:

Additional comments:
Site is located in Kodiak National Wildlife Refuge.

References:
Foley and Barker, 1985; Dahlin and others, 1985; Foley and others, 1989.

Primary reference: Foley and Barker, 1985

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 08/30/98

Site name(s): Halibut Bay 43

Site type: Occurrence

ARDF no.: KR018

Latitude: 57.342 **Quadrangle:** KR B-2

Longitude: 154.59

Location description and accuracy:
This site is located 3.8 miles north of Anvil Mountain in sec. 6, T. 33 S., R. 33 W., of the Seward Meridian (Foley and Barker, 1985, figure 25, locality 43; Foley and others, 1989, locality 32). Site location is accurate to within several hundred feet.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite

Gangue minerals:

Geologic description:
At this chromite occurrence, one of several known within the Halibut Bay ultramafic complex, discontinuous bands and irregular segregations of chromite are present in dunite. The zone containing the chromite measures 20 by 90 feet and has an estimated dip length of 22 feet. It strikes N. 35 W. and dips steeply to the southwest. Foley and Barker (1985, table 13) estimate tonnage and grade at 4000 tons of rock containing 6 percent chromite. The dunite is part of the Halibut Bay ultramafic complex, which also includes gabbro, pyroxenite, and peridotite. The complex occurs within sedimentary units of the Uyak formation of Cretaceous age.

Alteration:
The ultramafic country rock is serpentinized?

Age of mineralization:

Deposit model:
Podiform chromite (Cox and Singer, 1986; model 8b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
8b

Production Status None

Site Status: Inactive

Workings/exploration:
Foley and Barker (1985, table 13) estimate this deposit to contain 4000 tons of rock grading 6 percent chromite.

Production notes:

Reserves:
This deposit is estimated to contain 4,000 tons of rock grading 6 percent chromite.

Additional comments:
Site is located in Kodiak National Wildlife Refuge.

References:
Foley and Barker, 1985; Foley and others, 1989.

Primary reference: Foley and Barker, 1985

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 08/30/98

Site name(s): Halibut Bay 44

Site type: Occurrence

ARDF no.: KR019

Latitude: 57.359 **Quadrangle:** KR B-2

Longitude: 154.622

Location description and accuracy:
This site is located 5.1 miles northwest of Anvil Mountain in sec. 32, T. 32 S., R. 33 W., of the Seward Meridian (Foley and Barker, 1985, figure 25, locality 44; Foley and others, 1989, locality 32). Site location is accurate to within several hundred feet.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite

Gangue minerals:

Geologic description:
At this chromite occurrence, one of several known within the Halibut Bay ultramafic complex, massive, sheared chromite is present in rubblecrop composed of interlayered serpentinized dunite, clinopyroxenite, and anorthosite. The layers range in thickness from several inches to several feet, strike eastward, and dip vertically. The strike length of mineralization is inferred to be 225 feet with a dip length of 56 feet. A 3-foot wide zone, exposed in a trench was estimated to contain 20 percent chromite (Foley and Barker, 1985, table 13). Tonnage was estimated at 2000 tons. A high-grade sample from this zone had a head grade of 47.5 percent chromite and a gravity concentrate grade of 65.5 percent chromite. The concentrate had a chrome:iron ratio of 2.8 and contained traces of gold, silver, platinum, and palladium (Dahlin and others, 1985, table A-28).

The Halibut Bay ultramafic complex , consisting mostly of dunite, gabbro, pyroxenite, and peridotite, occurs within sedimentary units of the Uyak formation of Cretaceous age.

Alteration:
The ultramafic country rock is serpentinized.

Age of mineralization:

Deposit model:

Podiform chromite (Cox and Singer, 1986; model 8a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
8a

Production Status None

Site Status: Inactive

Workings/exploration:
Based on exposures in a 150-foot trench, Foley and Barker (1985, table 13) estimate the zone to contain 2000 tons of rock grading 20 percent chromite. A bulk sample had a head grade of 47.5 percent chromite and a gravity concentrate grade of 65.5 percent chromite. The concentrate gave a chrome:iron ratio of 2.8 and contained traces of gold, silver, platinum, and palladium (Dahlin and others, 1985, table A-28).

Production notes:

Reserves:
This deposit is estimated to contain 2,000 tons of rock grading 20 percent chromite.

Additional comments:
Site is located in Kodiak National Wildlife Refuge.

References:
Foley and Barker, 1985; Dahlin and others, 1985; Foley and others, 1989.

Primary reference: Foley and Barker, 1985

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 09/01/98

Site name(s): Halibut Bay 45

Site type: Occurrence

ARDF no.: KR020

Latitude: 57.352 **Quadrangle:** KR B-2

Longitude: 154.604

Location description and accuracy:
This site is located 4.5 miles north of Anvil Mountain in sec. 1, T. 33 S., R. 34 W., of the Seward Meridian (Foley and Barker, 1985, figure 25, locality 45; Foley and others, 1989, locality 32). Site location is accurate to within several hundred feet.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite

Gangue minerals:

Geologic description:
At this chromite occurrence, one of several within the Halibut Bay ultramafic complex, chromite seams less than 1 inch in thickness occur in a 30 by 3-foot wide zone having an estimated depth of 8 feet. Grade was estimated to be 10 percent chromite and size to be less than 1000 tons (Foley and Barker, 1985, table 13).

The Halibut Bay ultramafic complex, consisting mostly of dunite, gabbro, pyroxenite, and peridotite, occurs within sedimentary units of the Uyak formation of Cretaceous age.

Alteration:
The ultramafic country rock is serpentinized?

Age of mineralization:

Deposit model:
Podiform chromite (Cox and Singer, 1986; model 8a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
8a

Production Status None

Site Status: Inactive

Workings/exploration:
This deposite is estimated to contain less than 1000 tons of rock grading 10 percent chromite (Foley and Barker, 1985, table 13).

Production notes:

Reserves:
This deposit is estimated to contain less than 1,000 tons of rock grading 10 percent chromite.

Additional comments:
Site is located within Kodiak National Wildlife Refuge.

References:
Foley and Barker, 1985; Foley and others, 1989.

Primary reference: Foley and Barker, 1985

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 09/01/98

Site name(s): Halibut Bay 46

Site type: Occurrence

ARDF no.: KR021

Latitude: 57.354 **Quadrangle:** KR B-2

Longitude: 154.585

Location description and accuracy:
This site is located 4.6 miles north of Anvil Mountain in sec. 33, T. 32 S., R 33 W., of the Seward Meridian (Foley and Barker, 1985, figure 25, locality 46; Foley and others, 1989, locality 32). Site location is accurate to within several hundred feet.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite

Gangue minerals:

Geologic description:
This chromite occurrence, one of several within the Halibut Bay ultramafic complex, consists of segregations and disseminations of magnetic chromite within a 35-foot thick dunite layer which is bounded by clinopyroxenite. The dunite layer strikes N. 10 W. and has an inferred strike length of 750 feet and an inferred dip length of 187 feet. Foley and Barker (1985, table 13) estimate that the layer contains 43,000 tons of rock grading 7 percent chromite. A bulk sample of the mineralized dunite had a head grade of 7.7 percent chromite and a gravity concentrate grade of 34.6 percent. The concentrate had a chrome: iron ratio of 1.1 and contained traces of gold, silver, platinum, and palladium (Dahlin and others, 1985, table A-28). No estimates of recoverable chromite were made because of the inferior quality of the concentrate.

The Halibut Bay ultramafic complex, consisting mostly of dunite, gabbro, pyroxenite, and peridotite, occurs within sedimentary units of the Uyak formation of Cretaceous age

Alteration:
The ultramafic country rock is serpentinized?

Age of mineralization:

Deposit model:

Podiform chromite (Cox and Singer, 1986; model 8b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
8b

Production Status None

Site Status: Inactive

Workings/exploration:
This deposit is estimated to contain 43,000 tons of rock grading 7 percent chromite (Foley and Barker, 1985, table 13). A bulk sample had a head grade of 7.7 percent chromite and a gravity concentrate grade of 34.6 percent chromite. The chrome:iron ratio of the concentrate was 1.1 and contained traces of gold, silver, platinum, and palladium (Dahlin and others, 1985, table A-28).

Production notes:

Reserves:
This deposit is estimated to contain 43,000 tons grading 7 percent chromite. Concentrates of the chromite indicate inferior quality.

Additional comments:
Site is located within Kodiak National Wildlife Refuge.

References:
Foley and Barker, 1985; Dahlin and others, 1985; Foley and others, 1989.

Primary reference: Foley and Barker, 1985

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 09/01/98

Site name(s): Halibut Bay 47

Site type: Occurrence

ARDF no.: KR022

Latitude: 57.36 **Quadrangle:** KR B-2

Longitude: 154.595

Location description and accuracy:
This site is located 5.0 miles north of Anvil Mountain in sec. 33, T. 32 S., R. 33 W., of the Seward Meridian (Foley and Barker, 1985, figure 25, locality 47; Foley and others, 1989, locality 32). Site location is accurate to within several hundred feet.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite

Gangue minerals:

Geologic description:
At this chromite occurrence, one of several within the Halibut Bay ultramafic complex, north-striking bands of chromite less than an inch thick occur in serpentinized dunite. Because of poor exposure no samples were collected and the extent of the mineralization is unknown. The Halibut Bay ultramafic complex, consisting mostly of dunite, pyroxenite, and peridotite, occurs within sedimentary units of the Uyak formation of Cretaceous age.

Alteration:
The ultramafic country rock is serpentinized.

Age of mineralization:

Deposit model:
Podiform chromite (Cox and Singer, 1986; model 8a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
8a

Production Status None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
Site is located within Kodiak National Wildlife Refuge.

References:
Foley and Barker, 1985; Foley and others, 1989.

Primary reference: Foley and Barker, 1985

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 09/01/98

Site name(s): Halibut Bay 48

Site type: Occurrence

ARDF no.: KR023

Latitude: 57.359 **Quadrangle:** KR B-2

Longitude: 154.598

Location description and accuracy:
This site is located 5.0 miles north of Anvil Mountain in sec. 32, T. 32 S., R. 33 W., of the Seward Meridian (Foley and Barker, 1985, figure 25, locality 48; Foley and others, 1989, locality 32). Site location is accurate to within several hundred feet.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite

Gangue minerals:

Geologic description:
This chromite occurrence, one of several within the Halibut Bay ultramafic complex, consists of a zone of disseminated grains and bands or stringers of chromite. The zone, inferred to measure 150 by 6 feet and to have inferred depth of 38 feet, constitutes an inferred resource of approximately 4000 tons of rock containing an estimated 6 percent chromite (Foley and Barker, 1985, table 13). A chip sample across 6 feet assayed 120 ppm cobalt, 3.8 percent chrome, 640 ppm copper, 120 ppm nickel, and trace amounts of platinum and palladium (Foley and Barker, 1985, table 14).

The Halibut Bay ultramafic complex, consisting mostly of dunite, gabbro, pyroxenite, and peridotite, occurs within sedimentary units of the Uyak formation of Cretaceous age

Alteration:
The ultramafic country rock is serpentinized?

Age of mineralization:

Deposit model:
Podiform chromite (Cox and Singer, 1986; model 8b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

8b

Production Status None

Site Status: Inactive

Workings/exploration:

This deposit is inferred to contain 4000 tons of rock grading 6 percent chromite. One six-foot chip sample assayed 3.8 percent chrome, 120 ppm cobalt, 640 ppm copper, 120 ppm nickel, with trace platinum and palladium.

Production notes:

Reserves:

This deposit is estimated to contain 4000 tons of rock grading 6 percent chromite.

Additional comments:

Site is located within Kodiak National Wildlife Refuge.

References:

Foley and Barker, 1985; Foley and others, 1989.

Primary reference: Foley and Barker, 1985

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 09/02/98

Site name(s): Halibut Bay 49

Site type: Occurrence

ARDF no.: KR024

Latitude: 57.361 **Quadrangle:** KR B-2

Longitude: 154.598

Location description and accuracy:
This site is located 5.1 miles north of Anvil Mountain in sec. 32, T. 32 S., R. 33 W., of the Seward Meridian (Foley and Barker, 1985, figure 25, locality 49; Foley and others, 1989, locality 32). Site is accurate to within several hundred feet.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite

Gangue minerals:

Geologic description:
At this chromite occurrence, one of several in the Halibut Bay ultramafic complex, massive chromite segregations occur in dunite rubblecrop near a small shear zone. Because of lack of exposure no other data are available.

The Halibut Bay ultramafic complex, consisting mostly of dunite, gabbro, pyroxenite, and periodite, occurs within sedimentary units of the Uyak formation of Cretaceous age.

Alteration:
The ultramafic country rock is serpentinized?

Age of mineralization:

Deposit model:
Podiform chromite (Cox and Singer, 1986; model 8a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
8a

Production Status None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
Site is located within Kodiak National Wildlife Refuge.

References:
Foley and Barker, 1985; Foley and others, 1989.

Primary reference: Foley and Barker, 1985

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 09/02/98

Site name(s): Halibut Bay 50

Site type: Occurrence

ARDF no.: KR025

Latitude: 57.363 **Quadrangle:** KR B-2

Longitude: 154.599

Location description and accuracy:
This occurrence is located 5.3 miles north of Anvil Mountain in sec. 32, T. 32 S., R. 33 W., of the Seward Meridian (Foley and Barker, figure 25, 1985, locality 50; Foley and others, 1989, locality 32). Site location is accurate to within several hundred feet.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite

Gangue minerals:

Geologic description:
At this chromite occurrence, one of several in the Halibut Bay ultramafic complex, chromite is present as bands less than 1 inch in thickness, as disseminations, and as massive segregations up to 6 inches across. The mineralized zone is inferred to measure 450 by 5 feet and to have a dip length of 112 feet. The zone strikes N. 5 W. and dips 55 W. The deposit is estimated to contain 26,000 tons of rock grading 6 percent chromite (Foley and Barker, 1985, table 13). A channel sample across a 3-foot stringer zone assayed 14.84 percent chrome. A bulk sample had a head grade of 21.2 percent chromite and a gravity concentrate grade of 53.5 percent chromite. The concentrate had a chrome:iron ratio of 2.6 and contained traces of silver, gold, platinum, and palladium (Dahlin and others, 1985, table A-30). Small showings of chromite were observed 70 feet upslope and 200 feet downslope from the main zone.

The Halibut Bay ultramafic complex, consisting mostly of gabbro, dunite, pyroxenite, and peridotite, occurs within sedimentary units of the Uyak formation of Cretaceous age.

Alteration:
The ultramafic country rock is serpentinized?

Age of mineralization:

Deposit model:
Podiform chromite (Cox and Singer, 1986; model 8b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
8b

Production Status None

Site Status: Inactive

Workings/exploration:
The deposit is estimated to contain 26,000 tons of rock grading 6 percent chromite. A bulk sample had a head grade of 21.2 percent chromite and a gravity concentrate grade of 53.5 percent chromite, with a chrome:iron ratio of 2.6.

Production notes:

Reserves:
The deposit is estimated to contain 26,000 tons of rock grading 6 percent chromite.

Additional comments:
Site is located within Kodiak National Wildlife Refuge.

References:
Foley and Barker, 1985; Dahlin and others, 1985; Foley and others, 1989.

Primary reference: Foley and Barker, 1985

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 09/05/98

Site name(s): Halibut Bay 51

Site type: Occurrence

ARDF no.: KR026

Latitude: 57.369 **Quadrangle:** KR B-2

Longitude: 154.592

Location description and accuracy:
This occurrence is located 5.6 miles north of Anvil Mountain in sec. 28, T. 32 S., R. 33 W., of the Seward Meridian (Foley and Barker, 1985, figure 25, locality 51; Foley and others, 1989, locality 32). Site location is accurate to within several hundred feet.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite

Gangue minerals:

Geologic description:
This chromite occurrence, one of several located within the Halibut Bay ultramafic complex, consists of lenses or bands of disseminated, coalescent, and massive chromite alternating with nearly barren dunite.
The mineralized zone is inferred to measure 1250 by 150 feet and to have an inferred dip length of 312 feet. The deposit is estimated to contain 6,031,000 tons of rock grading 5 percent chromite (Foley and Barker, 1985, table 13). Bulk sample head grades ranged from 23.2 to 42.1 percent chromite and gravity concentrate grades ranged from 51.6 to 56.1 percent. The concentrates gave a chrome:iron ratio ranging from 2.1 to 3.0. and contained traces of gold, silver, platinum, and palladium (Dahlin and others, 1985, tables A-31, A-32, A-33).
The Halibut Bay ultramafic complex, consisting mostly of gabbro, dunite, pyroxenite, and peridodite, occurs within sedimentary units of the Uyak formation of Cretaceous age.

Alteration:
The ultramafic country rock is serpentinized?

Age of mineralization:

Deposit model:

Podiform chromite (Cox and Singer, 1986; model 8b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
8b

Production Status None

Site Status: Inactive

Workings/exploration:
The deposit is estimated to contain 6,031,000 tons of rock grading 5 percent chromite. Head grades of bulk samples ranged from 23.2 to 42.1 percent chromite and gravity concentrate grades ranged from 51.6 to 56.1 percent, with chrome:iron ratios ranging from 2.1 to 3.0.

Production notes:

Reserves:
The deposit is estimated to contain 6,031,000 tons of rock grading 5 percent chromite.

Additional comments:
Site is located within Kodiak National Wildlife Refuge.

References:
Foley and Barker, 1985; Dahlin and others, 1985; Foley and others, 1989.

Primary reference: Foley and Barker, 1985

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 09/05/98

Site name(s): Halibut Bay 14G

Site type: Occurrence

ARDF no.: KR027

Latitude: 57.354 **Quadrangle:** KR B-2

Longitude: 154.614

Location description and accuracy:
This site is located 4.7 miles northwest of Anvil Mountain in sec. 32, T. 32 S., R. 33 W., of the Seward Meridian (Foley and Barker, 1985, figure 26, locality 14G; Foley and others, 1989, locality 32). This site location is accurate to within a few hundred feet.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite

Gangue minerals:

Geologic description:
At this chromite occurrence, one of several within the Halibut Bay ultramafic complex, chromite is present in fresh dunite. A sample of this material contained 1,390 ppm nickel, 112 ppm cobalt, 3 ppm copper, and traces of gold, silver, platinum, and palladium (Foley and Barker, 1985, table 14). Chromium content was not determined.

The Halibut Bay ultramafic complex , which consists mostly of dunite, gabbro, pyroxenite, and peridotite, occurs within sedimentary units if the Uyak formation of Cretaceous age.

Alteration:
None.

Age of mineralization:

Deposit model:
Podiform chromite (Cox and Singer, 1986; model 8a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
8a

Production Status None

Site Status: Inactive

Workings/exploration:

One sample of the chromite-bearing dunite contained 1,390 ppm nickel, 112 ppm cobalt, 3 ppm copper, and traces of gold, silver, platinum, and palladium.

Production notes:

Reserves:

Additional comments:

Site is located within Kodiak National Wildlife Refuge.

References:

Foley and Barker, 1985; Foley and others, 1989.

Primary reference: Foley and Barker, 1985

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 09/06/98

Site name(s): Halibut Bay 15G

Site type: Occurrence

ARDF no.: KR028

Latitude: 57.357 **Quadrangle:** KR B-2

Longitude: 154.595

Location description and accuracy:
This site is located 4.8 miles north of Anvil Mountain in sec. 33, T. 32 S., R. 33 W., of the Seward Meridian (Foley and Barker, 1985, figure 26, locality 15G; Foley and others, 1989, locality 32). Site location is accurate to within a few hundred feet.

Commodities:

Main: Cu, Ni

Other: Cr

Ore minerals: Chalcopyrite, chromite, pyrrhotite

Gangue minerals:

Geologic description:
At this mineral occurrence, one of several within the Halibut Bay ultramafic complex, chalcopyrite and pyrrhotite are present as disseminations in a 3-foot layer of gabbro. The gabbro layer lies between pyroxenite and peridotite. A sample of this material contained 1,700 ppm copper, 420 ppm nickel, 25 ppm cobalt, and traces of gold, silver, platinum, and palladium (Foley and Barker, 1985, table 14).

The Halibut Bay ultramafic complex, consisting mostly of dunite, gabbro, pyroxenite, and peridotite, occurs within sedimentary units of the Uyak formation of Cretaceous age.

Alteration:

Age of mineralization:

Deposit model:
Synorogenic-synvolcanic Ni-Cu (Cox and Singer, 1986; model 7a?)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
7a?

Production Status None

Site Status: Inactive

Workings/exploration:

A grab sample from this locality contained 1,700 ppm copper, 420 ppm nickel, 25 ppm cobalt, and traces of gold, silver, platinum, and palladium.

Production notes:

Reserves:

Additional comments:

Site is located within Kodiak National Wildlife Refuge.

References:

Foley and Barker, 1985; Dahlin and others, 1985; Foley and others, 1989.

Primary reference: Foley and Barker, 1985

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 09/06/98

Site name(s): Halibut Bay 16G

Site type: Occurrence

ARDF no.: KR029

Latitude: 57.359 **Quadrangle:** KR B-2

Longitude: 154.595

Location description and accuracy:
This site is located 4.9 miles north of Anvil Mountain is sec. 33, T. 32 S., R. 33 W., of the Seward Meridian (Foley and Barker, 1985, figure 26 locality 16G; Foley and others, 1989, locality 32). Site is location is accurate to within several hundred feet.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcopyrite, pyrrhotite

Gangue minerals:

Geologic description:
At this mineral occurrence, one of several within the Halibut Bay ultramafic complex, chalcopyrite and pyrrhotite are present within a 3-foot-wide zone of pyroxenite. A sample of this material contained 2,000 ppm copper and traces of gold, platinum, and palladium (Foley and Barker, 1985, table 14). Nickel content was not determined.

The Halibut Bay ultramafic complex, consisting mostly of dunite, gabbro, pyroxenite, and peridotite, occurs within sedimentary units of the Uyak formation of Cretaceous age.

Alteration:

Age of mineralization:

Deposit model:
Synorogenic-synvolcanic nickel-copper (Cox and Singer, 1986; model 7a?)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
7a?

Production Status None

Site Status: Inactive

Workings/exploration:
A grab sample contained 2000 ppm copper and traces of gold, platinum, and palladium.

Production notes:

Reserves:

Additional comments:
Site is located within Kodiak National Wildlife Refuge.

References:
Foley and Barker, 1985; Foley and others, 1989.

Primary reference: Foley and Barker, 1985

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 09/06/98

Site name(s): West Coast Kodiak Island

Site type: Mine

ARDF no.: KR030

Latitude: 57.14 **Quadrangle:** KR A-2

Longitude: 154.52

Location description and accuracy:

This site in the Karluk quadrangle represents an 18-mile stretch of beach which has been sporadically mined for placer gold. The beach extends southward to Cape Alitak in the Trinity Islands quadrangle (see Trinity Islands quadrangle, sites ARDF numbers TI001 and TI003) and northward to Red River on the Karluk B-2 quadrangle (Cobb, 1972, MF 459, locality 5; Cobb, 1973, Bulletin 1374, figure 11, locality 1; MacKevett and Holloway, 1977, locality 5).

Commodities:

Main: Au

Other: Cr, PGE

Ore minerals: Gold

Gangue minerals:

Geologic description:

Placer mining in this area was first reported by Becker (1898) at Portage and Ayakulik Rivers. Maddren (1919) reported that finely divided gold was present along the entire beach. Becker's examination indicated that the gold occurs with other heavy minerals in patches approximately 1 inch thick and extending over a few square yards. The gold was scaly and not easy to amalgamate. The patches were not consistent in thickness or richness and thus did not form paystreaks in the usual sense. These patchy concentrations of heavy minerals consisted mostly of magnetite with lesser amounts of chromite, gold, pyrite, and a little platinum. In some instances good concentrations of gold were found to lie on a layer of compact clay bedrock. No estimates of gold values within these patchy zones of heavy minerals has been reported. Maddren (1919) estimated the total value of production of all the west coast Kodiak Island beaches up to 1917 to be $50,000 to $150,000 (gold at $20.67 per ounce), and an annual production valued at $3,000 to $10,000. Cobb (1973) estimates total production at probably not greater than a few thousand ounces. The immediate source of the gold appears to be nearby bluffs of glacial gravels and tills which are constantly being eroded by wave action.

An analysis of placer PGE concentrate from the beach (Maddren, 1919) is as follows:

26.9 percent iridium-osmium, rhodium; 6.1 percent iridium from part of iridium-osmium; 0.1 percent rhodium from part of iridium-osmium; 55.3 percent platinum; 2.4 percent iridium; 6.4 percent iron; 0.3 percent gold; 0.7 percent rhodium; 0.1 percent palladium; 0.6 percent copper; 0.08 percent nickel; trace silver and zinc. This sample recalculated free of impurities and totalled to 100 percent is as follows: 64.8 percent platinum; 10.0 percent iridium; 24.2 percent iridium plus osmium; 0.9 percent rhodium; 0.1 percent palladium (Mertie, 1969).

Alteration:

Age of mineralization:
Quaternary

Deposit model:
Gold-PGE placer (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status Yes; small

Site Status: Inactive

Workings/exploration:
Small-scale placer mining has been reported in this area from 1898 to at least 1952. Maddren (1919) reports that in some years up to 100 men were engaged in placer mining. In 1917 twelve men were mining and in 1950-51 two men were mining. Mining was done by rockers and portable sluice boxes. All equipment had to be removed from the beach during high tides.

Production notes:

Reserves:

Additional comments:

References:
Becker, 1898; Martin, 1913; Brooks, 1918; Brooks, 1921; Maddren, 1919; Smith, 1933; Smith, 1941; Smith, 1942; Capps, 1937; Mertie, 1969; McGee, 1972; Cobb, 1972 (MF459); Cobb, 1973 (B 1374); MacKevett and Holloway, 1977; Cobb, 1979 (OFR 79-860).

Primary reference: Maddren, 1919

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 09/11/98

Site name(s): Gurney Bay

Site type: Occurrence

ARDF no.: KR031

Latitude: 57.33 **Quadrangle:** KR B-3

Longitude: 154.73

Location description and accuracy:
This occurrence is located north of Gurney Bay and approximately 1 1/2 miles south of VABM Spit (Foley and Barker, 1985, figure 24, locality 1A). Site is accurate to within 1 mile.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite

Gangue minerals:

Geologic description:
Minor chromite occurs in an ultramafic complex consisting of complexly layered gabbro and pyroxenite and minor serpentinized pyroxene peridotite and dunite.

Alteration:
The ultramafic country rock is serpentinized.

Age of mineralization:

Deposit model:
Podiform chromite (Cox and Singer, 1986; model 8a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
8a

Production Status None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
Site is located within Kodiak National Wildlife Refuge.

References:
Foley and Barker, 1985.

Primary reference: Foley and Barker, 1985

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 10/07/98

Site name(s): Sturgeon River

Site type: Occurrence

ARDF no.: KR032

Latitude: 57.41 **Quadrangle:** KR B-2

Longitude: 154.52

Location description and accuracy:
This site is located between the Sturgeon and Ayakulik Rivers approximately 5 1/2 miles southeast of Grant Lagoon (Foley and Barker, 1985, figure 24, locality 1C). Site location is accurate to within 1/2 mile.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite

Gangue minerals:

Geologic description:
At this occurrence dunite segregations and minor, disseminated chromite are present in sill-like bodies of pyroxene peridotite.

Alteration:
The ultramafic country rock is serpentinized?

Age of mineralization:

Deposit model:
Podiform chromite (Cox and Singer, 1986; model 8a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
8a

Production Status None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:
Foley and Barker, 1985.

Primary reference: Foley and Barker, 1985

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 10/07/98

Site name(s): Grant Lagoon

Site type: Occurrence

ARDF no.: KR033

Latitude: 57.46 **Quadrangle:** KR B-2

Longitude: 154.55

Location description and accuracy:
This occurrence is located approximately 3 miles east of Grant Lagoon (Foley and Barker, 1985, figure 24, locality 1D). Site location is accurate to within 1/2 mile.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite

Gangue minerals:

Geologic description:
Disseminated chromite occurs in dunite cobbles and boulders derived from the Grant Lagoon ultramafic complex, which consists primarily of gabbro. A gravity concentrate of samples of dunite contained 53.4 percent chromite with a chrome:iron ratio of 2.3.

Alteration:
The ultramafic country rock is serpentinized?

Age of mineralization:

Deposit model:
Podiform chromite (Cox and Singer, 1986; model 8a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
8a

Production Status None

Site Status: Inactive

Workings/exploration:

A gravity concentrate of mineralized dunite boulders contained 53.4 percent chromite with a chrome:iron ratio of 2.3.

Production notes:

Reserves:

Additional comments:
Site is on land conveyed to the Koniag Corporation.

References:
Foley and Barker, 1985.

Primary reference: Foley and Barker, 1985

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 10/07/98

References

Becker, G.F., 1898, Reconnaissance of some gold fields of southern Alaska with some notes on general geology: *in* Wolcott, Charles D., dir., U.S. Geological Survey 18th annual report, p. 7-86.

Berg, H., and Cobb, E.H., 1967, Metalliferous lode deposits of Alaska: U.S. Geological Survey Bulletin 1246, 254 p.

Bliss, J.D., ed., 1992, Developments in mineral deposit modeling: U.S. Geological Survey Bulletin 2004, 168 p.

Brooks, A.H., 1912, The Alaska mining industry in 1911, *in* Brooks, A.H. and others, Mineral resources of Alaska, 1911: U.S. Geological Survey Bulletin 520, p. 17-24.

Brooks, A.H., 1918, The Alaska mining industry in 1916, *in* Brooks, A.H. and others, Mineral resources of Alaska, 1916: U.S. Geological Survey Bulletin 662, p. 11-62.

Brooks, A.H., 1921, The future of Alaska mining, *in* Martin G.C. and others, Mineral resources of Alaska, 1917: U.S. Geological Survey Bulletin 714, p. 5-57.

Capps, S.R., 1937, Kodiak and adjacent islands, Alaska, *in* Smith, P.S. and others, Mineral resources of Alaska, 1934: U.S. Geological Survey Bulletin 880, p. 111-184, 1 map sheet, scale 1:250,000.

Church, S.E., Detterman, R.L., Wilson, F.H., 1989, Mineral and energy resource assessment maps of the Ugashik, Bristol Bay, and western Karluk quadrangles, Alaska: U.S. Geological Survey Map MF 1539I, 2 map sheets with tables, scale 1:250,000.

Church, S.E., Frisken J.G., Wilson, F.H., 1989, Interpretation of exploration geochemical data from Ugashik, Bristol Bay, and western Karluk quadrangles, Alaska: U.S Geological Survey Bulletin 1858, 45 p.

Cobb, E.H., 1972, Metallic mineral resource map of Karluk quadrangle, Alaska: U.S. Geological Survey Map MF 459, 1 map sheet, scale 1:250,000.

Cobb, E.H., 1973, Placer deposits of Alaska: U.S. Geological Survey Bulletin 1374, 213 p.

Cobb, E.H., 1979, Summary of references to mineral occurrences in the Afognak, Karluk, Kodiak, and Trinity Islands quadrangles, Alaska: U.S. Geological Survey Open Fine Report 79-860, 49 p.

Connelly, W., and Moore, J., 1979, Geologic map of the northwest side of Kodiak and adjacent islands, Alaska: U.S. Geological Survey Map MF 1057, 2 map sheets, scale 1:250,000.

Cox, D.P., and Singer, D.A., eds., 1986, Mineral deposit models: U.S. Geological Survey Bulletin 1693, 379 p.

Dahlin, D.C., Kirby, D.E., and Brown, L.L., 1985, Chromite deposits along the Border Ranges fault, southern Alaska, part 2, Mineralogy and results of beneficiation tests: U.S. Bureau of Mines Information Circular 8991, 37 p.

Detterman, R.L., Case, J.E., Wilson, F.H., Yount, M.E., and Allaway, W.H., 1983, Generalized geologic map of the Ugashik, Bristol Bay, and part of the Karluk quadrangles, Alaska: U.S. Geological Survey Map MF 1539A, 1 map sheet, scale 1:250,000.

Detterman, R.L., Case, J.E., Wilson, F.H., and Yount, M.E., 1987, Geologic map of the Ugashik, Bristol Bay, and part of the Karluk quadrangles, Alaska: U.S. Geological Survey Miscellaneous Inves-

tigation Series Map I-1685, 1 map sheet, scale 1:250,000.

Foley, J.Y., and Barker, J.C., 1985, Chromite deposits along the Border Ranges fault, part 1, Field Investigations and descriptions of chromite deposits: U.S. Bureau of Mines Information Circular 8990, 58 p.

Foley, J.Y., Barker, J.C., and Brown, L.L, 1985, Critical and Strategic Minerals Investigations in Alaska: Chromium: U.S. Bureau of Mines Open File Report 97-85, 54p. 1 map sheet, scale, 1 inch=80 miles.

Foley, J.Y., Burns, L.E., Schneider, C.L., and Forbes, R.B., 1989, Preliminary report of platinum group element occurrences in Alaska: Alaska Division of Geological and Geophysical Surveys Public Data File 89-20, 32 p., 1 map sheet, scale, 1:2,500,000.

MacKevett, E.M., and Holloway, C.D., 1977, Table describing metalliferous mineral deposits of the western part of southern Alaska: U.S. Geological Survey Open File Report 77-169F, 39 p., 1 map sheet, scale 1:1,000,000.

MacKevett, E.M., Singer, D.H., and Holloway, C.D., 1978, Maps and tables describing metalliferous mineral resource potential of southern Alaska: U.S. Geological Survey Open File Report 78-1E, 45 p. 2 map sheets, scale 1;1,000,000.

Maddren, A.G., 1919, The beach placers of the west coast of Kodiak Island, Alaska, *in* Martin, G.C., and others, Mineral resources of Alaska, 1917: U.S. Geological Survey Bulletin 692, p. 299-319.

Martin, G.C., 1913, Mineral deposits of Kodiak and neighboring islands, *in* Brooks, A.H., and others, Mineral resources of Alaska, 1912: U.S. Geological Survey Bulletin 542, p. 125-136.

McGee, D.L., 1972, Kodiak Island and vicinity, Alaska, geology and mineral resources: Alaska Division of Geological and Geophysical Surveys Open File Report 31, 7 p., 1 map sheet, scale 1:250,000.

Mertie, J.B., 1969, Economic geology of the platinum minerals: U.S. Geological Survey Professional Paper 630, 120 p.

Moore, G.W., 1967, Preliminary geologic map of Kodiak Island and vicinity, Alaska: U.S. Geological Survey Open-File Report 67-161, 1 map sheet, scale 1/250,000.

Ransome, A.L., and Kerns, W.H., 1954, Names and definitions of regions, districts and subdivisions in Alaska: U.S. Bureau of Mines Information Circular 7679, 91 p.

Smith, P.S., 1933, The mineral industry of Alaska in 1930, *in* Smith, P.S., and others, Mineral resources of Alaska, 1930: U.S. Geological Survey Bulletin 836, p.1-83.

Smith, P.S., 1941, The mineral industry of Alaska in 1939, *in* Smith, P.S., and others, Mineral resources of Alaska, 1939: U.S.Geological Survey Bulletin 926, p. 1-106.

Smith, P.S., 1942, The mineral industry of Alaska in 1940, *in* Smith, P.S., and others, Mineral resources of Alaska, 1940: U.S. Geological Survey Bulletin 933, p. 1-10

Smith, W.R., 1925, The Cold Bay-Katmai District, *in* Brooks and others, Mineral resources of Alaska, 1923: U.S. Geological Survey Bulletin 773, p. 183-207.

U.S. Bureau of Mines, 1973, Quadrangle map overlays showing mineral deposit locations in Alaska: U.

S. Bureau of Mines Open File Report 20-73, 95 map sheets, scale 1:250,000.

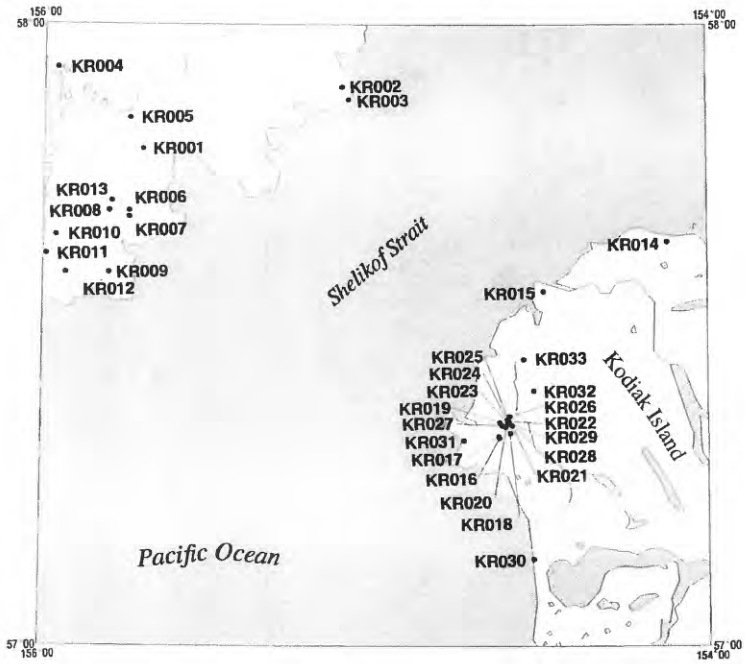
Wilson, F.H., and Shew, N., 1988, Map and tables showing geochronology and whole rock geochemistry of selected samples from Ugashik, Bristol Bay, and part of Karluk Quadrangles, Alaska: U. S. Geological Survey Map MF 1539E, 1 map sheet, scale 1:250,000.

Alaska Resource Data File

U.S. Department of the Interior - U.S. Geological Survey

Karluk quadrangle

Descriptions of the mineral occurrences shown on the accompanying figure follow. See U.S. Geological Survey (1996) for a description of the information content of each field in the records. The data presented here are maintained as part of a statewide database on mines, prospects and mineral occurrences throughout Alaska.



Distribution of mineral occurrences in the Karluk 1:250,000-scale quadrangle, Alaska

This and related reports are accessible through the USGS World Wide Web site http://www-mrs-ak.wr.usgs.gov/ardf. Comments or information regarding corrections or missing data, or requests for digital retrievals should be directed to Donald J. Grybeck, USGS, 4200 Unversity Dr., Anchorage, AK 99508-4667, email dgrybeck@usgs.gov, telephone (907) 786-7424. This compilation is authored by:

Steven H. Pilcher
12026 Wilderness
Anchorage, AK 99516

OPEN-FILE REPORT 99-42